

# **EFFECTIVENESS OF APPLICATION OF CHAMOMILE OIL ON PHLEBITIS AMONG PATIENT UNDERGOING CHEMOTHERAPY**



**A DISSERTATION SUBMITTED TO THE TAMILNADU  
DR. M.G.R.MEDICAL UNIVERSITY, CHENNAI IN PARTIAL  
FULFILMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING**

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**INTERNAL EXAMINER**

**EXTERNAL EXAMINER**

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CHEMOTHERAPY**

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## **CERTIFICATE**

This is to certify that this is a bonafide work of T.LILA II year Msc Nursing, Thasiah College of Nursing, Marthandam, in partial fulfilment of the requirement for the degree of Master of Science in Nursing.

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**Investigator**

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## ABSTRACT

**Background of the study:** Phlebitis is the one of the most common complication of the administration of intravenous therapy. It is an inflammation of a vein that may be caused by infection, and presence of a foreign body due to the frequent injections and recurring phlebitis, scar tissue build up along the vein. Application of chamomile oil is one of the non-pharmacological method of phlebitis management and is been widely practiced in many countries. It is the one of the safe, simple to learn, effective and non invasive method of phlebitis management. **Material and method:** The design adopted was pre experimental one group pre test, post test design. The Convenience sampling technique was used to select the samples. The tool used for data collection procedure was modified visual infusion phlebitis scale. Chamomile oil was applied to those in the phlebitis patients on 3 times a day for 3 consecutive days. **Results:** The study findings revealed that the pre test mean score was 7.76 and the post test score was 2.19 (MD=5.57). The obtained 't' value 11.27 was statistically significant at  $p>0.05$ . **Conclusion:** The application of chamomile oil reduced the level of phlebitis among patients undergoing chemotherapy

## CHAPTER – I

### INTRODUCTION

*‘Some times you get to choose your battles and sometimes they choose you’*

–Candy Jollan

#### **Background of the study:**

Health is a “State of complete physical, mental, social well being and not merely the absence of disease and infirmity. It is composed of a pattern of human environment interaction in which a person is transforming to higher levels of understanding and decision making capacity. Health is a dynamic life experience. “Dynamic” implies a continuous adjustment to stressors in internal and external environments and the use of one’s resources to achieve maximum potential. The meaning of health can be viewed in many contexts such as historical, social, personal, scientific, philosophical and spiritual. These meanings will always exist in the various contexts of individual human experience, are sometimes contradictory and often overlap.,(WHO., 1947)

Cancer is a very dangerous disease which has claimed many lives in the world. There are many different types of cancer which affect different parts of the body such as lung and bronchial cancer, colon and rectal cancer, breast cancer, pancreatic cancer, prostate cancer, leukaemia, non-Hodgkin lymphoma, liver and intra hepatic bile duct cancer, ovarian cancer and oesophageal cancer. Cancer is a group of disease involving abnormal cell growth with the potential to invade or spread to other parts of the body. (AntonaW.Mart., 1996)

Cancer is a group of cells that grows out of control, taking over the function of the affected organ. The cancer cells are described as poorly constructed, loosely formed and without organization. Neoplastic cells that remain in one area are considered localized, on in-site and cancers. These tumours may be difficult to visualize on clinical examination and are detected through microscopic cell examination. In-site tumours are often removed surgically and require no further treatment. Metastasis is a stage at which cancer cells acquire invasive behaviour characteristics and cause the surrounding tissue to change. It occurs primarily because cancer cells break away more easily than normal cells and can survive for the time

independently from other cells. It includes invade blood or lymph vessels, move by mechanical lodge and grow in a few location treatment of cancer. It can involve any of several modalities such as surgery, Radiation therapy, chemotherapy, Hormonal therapy and immune therapy.(**Chuanta., 2007**).

Chemotherapy is distinctively different approach that surgery and radiation therapy to treat cancer. Rather than physically removing a tumour or a part of it, chemotherapy uses chemical agents to interact with cancer cells to eradicate or control the growth of cancer. Chemotherapy drugs that interfere primarily with DNA synthesis and mitosis are used to destroy cancer cells. Different agents work through many different mechanism. Chemotherapeutic drugs cannot distinguish between normal cells and cancer cells, both types of cells are affected by chemotherapy. Chemotherapy induced side effects are the rest of the destruction of normal cells, especially those that are rapidly proliferating such as those in the bone marrow the lining of the gastrointestinal system and the integumentary system. Chemotherapy drugs are powerful enough to kill rapidly growing cancer cells, but they also can harm perfectly healthy cells, causing side effects throughout the body. The chemotherapy drug would target and destroy only cancer cells.(**Gilbert B.Billin., 2011**)

Chemotherapy works by stopping or slowing the growth of cancer cells, which grow and divide quickly. Chemotherapy drugs may be given in many ways. It includes intravenous injection, intra-arterial, intra-peritoneal, topically and orally. The route prescribed for administering a medication depends on the properties and desired effect of the medication by the patient's physical and mental condition. The most common routes to administer chemotherapy drugs are oral and intravenous but some drugs may be given in intra thecal injection, intraperitoneal injection, subcutaneous injection and intramuscular injection.(**Lorten duros.,2008**)

Intravenous therapy is the infusion of liquid substances directly into a vein. Intra venous means "with in vein". Intravenous infusions are commonly referred to as drips. The intravenous route is the fastest way to deliver fluids and medications throughout the body. Intravenous therapy may be used for fluid administration such as correcting dehydration to correct electrolyte imbalances, to deliver medications and for blood transfusions. Intravenous medicine administration occurs when a needle is inserted into a vein and medication is administered through that needle. The needle is

usually placed in a vein near the elbow, the wrist or on the back of the hand. It providing medication intravenously can potentially be dangerous. Some IV drugs that are given as infusion over time can accidentally be given too rapidly as a “push”. This may cause toxicity or damage the vein near the site of injection. Complications of gaining IV may include infiltration, phlebitis, hematoma, an air embolism and extra vascular drug administration. Nurses play a vital role in preventing their complications.**(Jack Dixon., 2004)**

Phlebitis is an inflammation of a vein that may be caused by infection the more presence of a foreign body (the IV catheter) or the fluids or medication being given. Symptoms are warmth, swelling, pain and redness around the vein. The IV device must be removed and if necessary re-inserted into another extremity. Due to frequent injections, recurring phlebitis and scar tissue can build up along the vein, clot formation, deep vein thrombosis and pulmonary embolism. When pronounced deep vein thrombophlebitis has seriously damaged the leg veins, this can lead to post-phlebitic syndrome. Post-phlebitic syndrome is characterized by chronic swelling of the involved leg and can be associated with leg pain, discoloration and ulcers.**(Jane C. Brillo.,2010)**

Phlebitis may be localized to the insertion site or travel along the vein. It extravasations of fluids in the intestinal space occurs, oedema may prevent recognition of phlebitis symptoms. Phlebitis may occur during catheterization or upto 48 hours after removal. Pain, tenderness, redness (erythema) and bulging of the vein are common symptoms of phlebitis. The redness and tenderness may follow the course of the vein under the skin. Low grade fever may accompany superficial and deep phlebitis. High fever or drainage of pus from the site of thrombophlebitis may suggest and infection of the thrombophlebitis. Palpable cords along the course of the vein may be a sign of superficial clot or superficial thrombophlebitis. A deep vein thrombosis may present as redness, swelling of the involved limb with pain and tenderness. In the leg, this can cause difficulty in walking.**(Brunilda., 2008)**

Treatment of phlebitis may depend on the location, symptoms and underlying medical conditions. The treatment of thrombophlebitis consist of self-care steps that include applying heat to the painful area, elevating the affected leg and using an over-the-counter non steroidal anti-inflammatory drug (NSAID), medications like

anticoagulant and support stockings. Some recent trends in hospital care include the application of chamomile oil. **(Joyce M clady 2008)**

Chamomile oil is an essential oil detracted from the bloom flowers of the plant who detract oil from the plants. In tamil chamomile means “chevanthi pookal”. It is the common name for several Daisy like plants of the family asteraceae that are commonly used to make herb infusion to serve various medicinal purposes. The plants healing properties come from daisy like popular uses of chamomile preparations include treating hay fever, inflammation, muscle spasms, menstrual disorders, insomnia, ulcers, GI disorders, and haemorrhoids. Chamomile tea is also used to treat skin conditions such as eczema, chicken pox and psoriasis.**(Wikipedia ,2002)**

Chamomile has been used for treatment of inflammation associated with haemorrhoids applied then topically applied. Major chemical compounds present with in chamomile oil include alpha-bisabolol has been shown to have antiseptic properties, anti-inflammatory properties and flowers which contain volatile oil (including bisabolol, bisabolol oxide A and B and Matricin) as well as flavonoids particularly reduce pepsin secretions without altering secretion of stomach acid. Anti cancer effect studies has shows that chamomile extracts have invitro growth incubatory effects on cancer cells in skin, prostate, breast and ovary.**(Kuoro.,2009)**

People use chamomile to treat irritation from chest colds, phlebitis, slow healing wounds, abscess, gum inflammation by skin conditions such as psoriasis, eczema, chicken pox and diaper rash. For these conditions can use chamomile oil in an infusion or both or as a tincture, which is a concentrated extract mixed with alcohol.Recent and ongoing research has identified chamomiles specific anti inflammatory, antibacterial muscle relaxant, anti spasmodic, anti allergic, sedative properties and validating its long-held reputation.**(LestobaV.Sandy., 1997)**

### **Need for the Study**

The term cancer is an “Umbrella” word used to describe a group of more than 100 diseases in which cells multiply and spread without restraint, destroying healthy tissue and endangering life. Carcinogenesis is a dynamic and multistep process that is influenced by many independent variables, cellular, genetic immunologic and



environmental factors interact to cause the abnormalities that result in the malignant process. A series of genetic mutations are core to the development of cancer and a number of endogenous and exogenous factors can be involved in these mutations. Endogenous factors include age, specific genetic abnormalities either spontaneous or inherited and immunologic deficiencies. Exogenous factors include such factors as radiation, tobacco and chemicals known to cause cellular damage. **(Rojark.suzan., 2008)**

Globally, the burden of cancer is increasing worldwide. More than 100 types of cancer affect human being. During the period of 1998 – 2002, there were 24.6 million cancer patients. More than 10 million people developed cancer in 2000 about 5.3 million men and 4.7 million women developed a malignant tumour and altogether 6.2 million died of the disease and of there more than half were from developing countries. **(Leddia H. Jenner., 2008)**

Approximately, it is estimated that 150 million peripheral intravenous devices are placed each year in North America alone. One of the most common complications of peripheral intravenous catheter is phlebitis that may occur in upto 75% of hospitalized patients. It remains a significant problem in clinical practice and cause patient discomfort, catheter replacement, prolonged hospital stay, health care costs, maintenance of the patency of these catheters and prevention of phlebitis is an important problem. It is estimated the 2, 00,000 cases of catheter related infections occur worldwide each year. **(MarcqsG.Jovana., 2010)**

In 2013, there were 124,465 new cases references cancer diagnosed in Australia (68,963 males and 55,529 females). In 2017, it is estimated that 134,174 new cases of cancer will be diagnosed in Australia (72,169 males and 62,005 females). In 2013, the age standardised incidence rate was 483 new cases per 100,000 persons (562 for males and 416 for females). In 2017, it is estimated that the age-standardised incidence rate will be 470 cases per 100,000 persons (526 for males and 423 for females). The incidence rate of all cancers combined will generally increase with age for both males and females. In 2017, it is estimated that the risk of an individual being diagnosed with cancer by their 85<sup>th</sup> birthday will be 1 in 2 (1 in 2 males and 1 in 2 females). The number of new cases of cancer diagnosed increased from 47,440 (25,420 males and 202,020 females) in 1982 to 124,465 in 2013. Over

the same period, the age standardised incidence rate increased from 383 new cases per 100,000 persons (472 for males and 328 for females) in 1982 to 483 cases per 100,000 persons in 2013.**(R.Shore, 2008).**

In 2014, there were 44,171 deaths from cancer in Australia (24,718 males and 19,453 females). In 2017, it is estimated that this will increase to 47,753 deaths (27,076 males and 20,677 females). In 2014 the age standardised mortality rate was 162 deaths per 100,000 persons (200 for males and 132 for female). In 2017, it is estimated that the age standardised mortality rate will be 161 deaths per 100,000 persons (200 for males and 129 for females). The mortality rate for all cancers combined will generally increase with age for both males and females. In 2017, the risk of an individual dying from cancer by their 85<sup>th</sup> birthday will be 1 in 5 ( 1 in 4 males and 1 in 6 females). The number of deaths from cancer increased from 17,032 (9,541 males and 7,491 females) in 1968 to 44,171 in 2014. Over the same period, the age standardised mortality rate decreased from 199 deaths per 1, 00,000 persons in 1968 (258 for males and 159 for females) to 162 deaths per 1, 00,000 persons in 2014.**(Rosans D.Milla., 2014)**

In 2009 – 2013, individuals diagnosed with cancer had a 68% chance (68% for males and 69% of females) of surviving for 5 years compared to their counterparts in the general Indian population. Between 1984 – 1988 and 2009-2013, 5 year relative survival from cancer improved from 48% to 68%. The Survivorship population is measured using prevalence data.**(Kalep.Janson., 2010)**

The centre for science and environment (CSE) survey sent several shockwaves among the citizenry, with the health ministry ordering a probe into the incident. However, with or without our daily bread, cancer is a very real problem in India with an estimated 2.5 million people living with the disease and its incidence is rising, as a recently released report, titled “Three year report of population based cancer Registries in India 2012 – 14” by the National Cancer Registry Program (NCRP), shows the coverage by this report is less than 10% of the population of India. However the National Cancer Registry Program ( NCRP) mentions that it reflects the cancer profile of the country fairly well owing to representation of registries from different parts of the country.**(Allen D.Pallo., 2012)**

The national cancer registry program (NCRP) started collecting cancer incidence data in 1982 by establishing three population based cancer registries at Bengaluru, Chennai, Mumbai, Dibrugarh and thiruvananthapuram which have gradually expanded over the years. Among the 27 population based cancer registries with 19746 cases, Delhi recorded the maximum number of cancer incidences. Delhi was followed by Thiruvananthapuram (15,640) and Mumbai (13,357). In terms of mortality rates, Mumbai topped the list in case of males with 69.6 percent mortality, while in case of females, Barshi a town in Maharashtra, recorded 66.3 percent mortality. **(JollenHentro., 2011)**

The recent survey of International Cancer centre, Neyyoor, Kanyakumari District patient received intravenous carboplatin at an area under the calvert formula dose ranging from 2 to 7.5 and intravenous paclitaxel dose ranging from 40 to 225 mg /m<sup>2</sup> administered every 3 weeks. Six out of 78 patients also received 600mg/m<sup>2</sup> f cyclophosphamide therapy in addition to carboplatin and paclitaxel. 65 out of 78 patients (833%) received neoadjuvant chemotherapy. They found that 53 of 78 patients completed 6 cycles or greater of a regimen consisting of atleast 175 mg / paclitaxel and an calvert formula  $\geq 5$  for carboplatin. **(Hark M.Shakan., 2013)**

The investigator, during her clinical experience has come across phlebitis patients having pain during chemotherapy. From the findings of literature, the researcher realized the importance of administering chamomile oil for the reduction of the phlebitis and designed a study on the effectiveness of chamomile oil on phlebitis, among chemotherapy patients.

### **Statement of the Problem**

The study to assess the effectiveness of application of chamomile oil on phlebitis among patient undergoing chemotherapy in selected cancer centre at Kanyakumari District.

### **Objectives**

- To determine the level of phlebitis among patients undergoing chemotherapy.
- To evaluate the effectiveness of application of chamomile oil on phlebitis among patients undergoing chemotherapy.

- To find out the association between the pre test level of phlebitis among patient undergoing chemotherapy with their selected demographic variables such as age, sex, skin colour, gauge of catheter, Insertion date, pre disposing condition, Type of Infusion, form of medication and site of intravenous cannula.

### **Hypothesis**

- H<sub>1</sub> – There will be a significant difference between pre test and post test phlebitis score among patient undergoing chemotherapy.
- H<sub>2</sub> – There will be a significant association between pre-test phlebitis score among patients undergoing chemotherapy with their selected demographic variables such as age, sex, skin colour, gauge of catheter, Insertion date, predisposing condition, Type of infusion, form of medication and site of intra venous cannula.

### **Assumption**

- Patients undergoing chemotherapy experience moderate and severe level of phlebitis
- Application of chamomile oil is one of the effective methods for reducing phlebitis.
- Chamomile oil has no side effects.

### **Operational Definition**

#### **Effectiveness**

It is the capability of producing a desired result or the ability to produce desired output. When something is deemed effective, it means it has an intended or expected outcome or produces a deep vivid.(Rocher J.Hark.,2012)

In this study, it refers to the extent to which the chamomile oil reduce as the intensity of phlebitis among patients undergoing chemotherapy assessed by using modified visual infusion phlebitis scale.

## **Chamomile oil**

Is a white aromatic, and essential oil is obtained from the flower heads of either of two chamomiles (*chamaemelum nobile* or *matricaria recutita*)(Wiki pedia)

In this study, it refers to fresh chamomile oil was taken from white chamomile flowers. The fresh chamomile oil 2.5 ml will be applied topically and to enrich the process of relaxation, to relieve phlebitis. It was applied over the phlebitis area in the palm of the hand in rotation manner. The time duration was 10 minutes for 3 times a day in 3 consecutive days.

## **Phlebitis**

Phlebitis is a condition in which a vein becomes inflamed. The inflammation may cause pain and swelling.(Brunner., 2009)

In this study, it refers to phlebitis, the inflammation of a vein. There is infiltration of the walls of the vein and formation of a clot in the vein.

## **Chemotherapy**

Chemotherapy is the treatment of disease by the use of chemical substances especially the treatment of cancer by cytotoxic and other drugs.(Brunner 2009)

In this study it refers to the use of medicines or drugs to treat cancer where in International cancer centre, Neyyoor for more than 6 months.

## **Delimitation**

- The study is limited to the age group of 30 to 60 years.
- The period of study is limited to 4 weeks.
- The study is limited to only one hospital(International cancer centre, Neyyoor)
- The sample size is limited to 60.

## **Projected Outcome**

Application of chamomile oil will have effectiveness in reducing phlebitis and there by facilitate the sense of reducing pain due to phlebitis.

## **Conceptual Frame Work**

Conceptual framework is a theoretical approach to study the problems that are scientifically based which emphasize selection, arrangement and classification of its concept.

Selecting a nursing conceptual framework helps to researcher to identify problems significance to the discipline of nursing.

Framework guiding a research study is not merely a review of the literature but also a creative product of the researcher's appraisal of the literature.

The present study is aimed to assess the effectiveness of application of chamomile oil in the management of phlebitis, as the study is on the concept of health maintenance, which the investigator has modified the J.W. Kenny's open system model (1969).

The investigator adopted modified J.W. Kenny's open system model as a basis for conceptual frame work. According to J.W. Kenny all living systems are open and they are in continuous exchange of matter energy and information, which results varying degree of interactions with environment from the system receives inputs and give backs output in the term of matter, energy and information. system model consists of three phases input, through put and output.

### **Input**

Based on J.W. Kenny, matter energy and information from the environment. In the present study environment refers to International cancer centre and input refers to the assessment of phlebitis with visual infusion phlebitis scale collecting demographic data (age, sex, skin colour, gauge of catheter, insertion date, pre disposing condition, type of infusion, form of medication and site of intravenous cannula) from chemotherapy patients.

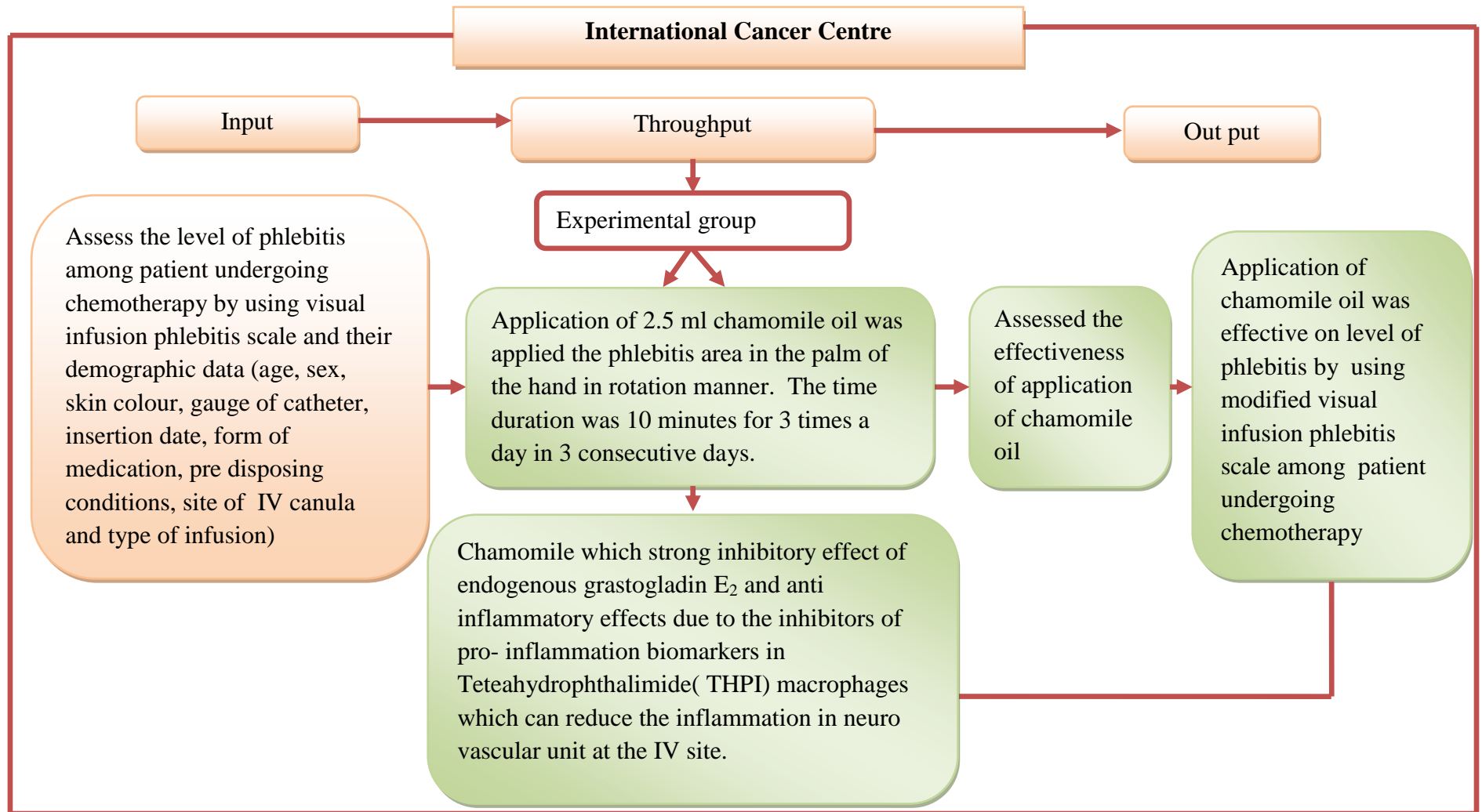
### **Through put (process)**

According to him, matter, energy and information are continually processed through the system, which is called complex transformation, known as throughput. Process is the use of input that is energy and information for the maintenance of

chemotherapy of the system. It refers to the different operational procedures in the overall programme implementation and includes factors that facilitate or block implementation at various stages. In this study process includes providing application of first 3 table spoon of chamomile oil was applied the phlebitis area in the palm of the hand in rotation manner. The time duration was 10 minutes.

### **Out put**

J.W. Kenny noted after processing the input, the system returns to the output to (matter, energy and information) to the environment in an altered state change is a feature of the process that is observable and measurable as output which should be different from that which is entered into the system. In this study the output reveals that the application of chamomile oil is effective on level of phlebitis among chemotherapy people in experimental group.



**Fig 1: Conceptual Framework Based on modified J.W. Kenny's Open System Model (1969)**



## **CHAPTER – II**

### **REVIEW OF LITERATURE**

Review of literature is a vital component of the research process. It gives the researcher orientation to the study. It provides the source of research ideas for the new researcher.(Polit., 2008)

The review of literature is presented under the following sub headings.  
Review of literature related to,

**Section A:** General information related to phlebitis

**Section B:** General information related to application of chamomile oil

**Section C:** Studies related to incidence and prevalence of phlebitis.

**Section D:** Studies related to effects of selective interventions in minimizing phlebitis pain.

**Section E:** Studies related to effectiveness of chamomile oil in minimizing phlebitis.

#### **Section: A**

##### **General information related to phlebitis**

##### **Introduction:**

Phlebitis is the inflammation of a vein, usually in the legs. It most commonly occurs in superficial vein. Phlebitis often occurs in thrombosis and is then called superficial thrombophlebitis. Unlike deep vein thrombosis, the probability that superficial thrombophlebitis will cause a clot to break up and be transported in pieces to the lung is very low.

##### **Definition**

Phlebitis means inflammation of a vein. Phlebitis, there is infiltration of the walls of the vein and the formation of a clot in the vein.

## **Incidence**

Phlebitis is the inflammation of the inferior wall of the vein. The incidence of the phlebitis is 27% to 70% of all patients receiving intravenous therapy. The nurses society states that the accepted phlebitis rate is 5% or less in any given population. Intravenous catheterization is the most common invasive procedure among patients admitted to hospital, with about half receiving intravenous therapy during their stay. The procedure is not without risks. Between 2.3% and 67% of patients develop phlebitis. The more serious complication, infection of the blood stream, occurs in about 0.1% of cases. The incidence of phlebitis, range between 1,25,000 cases 1 year (USA) and 2,53,000 cases / year (India), and is more frequent when more accurate diagnostic methods are used, such as duplex scan. In India in a retrospective survey of patients submitted to varicose vein survey, found sign, of previous phlebitis in 16% cases.

## **Causes (Brunner 2009)**

- a) phlebitis is usually caused by local trauma to a vein. Superficial phlebitis is most often caused by an intravenous catheter (IV) placed in a vein, and the vein becomes irritated. Superficial phlebitis may or not have a blood clot form to cause the pain and inflammation.
- b) Circumferential lymphocytic phlebitis, effecting all layer of wall, with numerous associated thrombophlebitis. Arterioles and arteries are not affected.

## **Signs and symptoms of Phlebitis**

- Pain
- Tenderness
- Redness
- Erythema
- Bulging of the vein
- Low grade fever

## **IV phlebitis treatment**

- Stop the infusion at the first sign of redness or pain
- Apply warm, moist compresses to the area
- Document your patients condition and interventions

- It is dilated, insert a new catheter at a different site, preferably on the opposite arm, using a larger vein or a smaller device and restart the infusion.

### **Phlebitis care**

- The health care profession makes the diagnosis of superficial phlebitis, the treatment includes warm compresses and anti-inflammatory medications such as ibuprofen. Compressions stockings may be helpful.
- If there is a skin infection associated with the superficial phlebitis, antibiotics may be prescribed.
- Initial treatment may begin with enoxaparin, injectable medication that immediately thins the blood.
- Warfarin is also started immediately but takes a few days to reach therapeutic level in the blood, so levonex is used as a guide to determine warfarin dosing.

### **Complications**

- Abscess formation
- Clot formation
- Deep vein thrombosis
- Pulmonary embolism

## **Section B: General information related to application of Chamomile oil**

### **Introduction**

Chamomile is one of the most ancient medicinal herbs known to mankind. It is a gentle herb known throughout most of the world which has been used continually for many centuries. It is often ingested as a tea to calm the nervous system and the digestive tract and is mild enough to be administered to babies with colics. It is soothing to irritated skin and membranes and is often found in lotions and oils.

### **Definition**

A white, aromatic, essential oil that is obtained from the flower heads of either of two chamomiles and is used as an ingredient in perfume and herbal medicine.

## History

Chamomile oil was not cultivated there until the 16<sup>th</sup> century and probably arrived in Britain and used as a medicinal plant ever since. The Egyptians dedicated the herb to the sun and worshiped it above all other herbs for its healing properties. In a popular gardening book of 1638, it was valued for its sweet apple-scented leaves. Frances A. Bardswell's herb garden (1911) states that chamomile has a remarkable effect on other plants and calls it the "plants physician". In modern day Eastern Europe, particularly Romania, children were sometimes asked to bring the herb to school during government run collection campaigns.



**Figure 1: Chamomile flower**

## Benefits

- It is used traditionally for numerous gastro intestinal conditions including digestive disorders such as gas, leaky gut, acid reflux, indigestion, diarrhoea and vomiting.
- It can be attributed to its anti spasmotic, anti septic, antibiotic, antidepressant, sedative and analgesic action.

## Mechanism

Chamomile which possesses anti inflammatory effects due to the inhibition of pro inflammatory biomarkers in THP1 macrophages and which can reduce inflammation in neurovascular units at the site of pain. Chamomile oil mentioned mechanism of action, it can be hypothesised that chamomile oil is a novel medicine for the relief of peripheral pain.

### **Application of Chamomile oil**

To help the patients by diffuse chamomile oil at home or dilute 1 – 2 drops with coconut oil and apply the mixture topically to the area in need (such as the temples, stomach, consists, back of neck or bottoms of the feet). It can also be used topically on temples to help with nausea, phlebitis, itching, stomach ache.

### **Advantages**

- It helps to reliefs to phlebitis.
- Fights anxiety and depression
- Serves as a natural allergy reliever
- Helps alleviate PMS symptoms
- Reduce symptoms of Insomnia
- Boosts skin health
- Supports digestive health
- Promotes heart health
- May relieve arthritic pain

### **Disadvantages**

- Do not use if you are allergic to ragweed pollens
- Avoid use during pregnancy

### **Section C:**

#### **Studies Related to incidence and prevalence of thrombophlebitis**

**Luis Carlos do Rego Furtado, (2007)** conducted a study to determine the sincidence of phlebitis related to peripheral cannula, and its predisposing factor in a general surgery department. A data collection tool was developed based on the previous literature and was completed in 1 month. All patients with peripheral cannula who fulfilled the inclusion criteria, and who agreed to participate in the study where monitored. This was a quantitative study, which used descriptive, inferential, and co relational analysis. A total of 171 patients and 286 peripheral cannula were monitored .The average incidence of phlebitis was 61.5%, and factors such as diabetes and tobacco consumption were identified as relevant to the development of phlebitis .Other elements identified as predisposing to the development of phlebitis include

administration of potassium chloride, the dwell time of the peripheral cannula, and the anatomical location of the cannula. Phlebitis associated with peripheral cannula is still a current problem requiring knowledgeable staff who can prevent, and act approximately in a timely manner to minimize its severity.

Prospective quantitative study **Dawson philp,(2008)** was conducted by to identify the incidence or absence of phlebitis in a General hospital, which analysed 76 patients and used the sgradind pain scale. Of these, 24 (31.6%) developed phlebitis; 10 (41.6%) were classified as Grade 1 phlebitis, 9 (37.5%) as Grade 2, 4 (16.7%) as Grade 3 and 1 (4.2%) as grade 4. The length of time the device remained in site ranged from 3 to 120 hours with an average of 49 hours. In this study important role in preventing complications associated with peripheral intravenous access. Furthermore, the risk of phlebitis should be carefully evaluated.

**Wilkinson YoongJannet, (2008)** conducted an observational study on adult patients admitted to the surgical and medical ward of a tertiary hospital in Negeri Sembilan Malaysia. Risk factors that were studied in this research were patients age and gender, duration of catheterization, use of catheter for infusion, size of catheter, site of catheter, infusion and types of infusion. In total, 428 patients were recruited with an incidence rate of thrombophlebitis of 35.2%. Among those who developed thrombophlebitis, 65% had mild phlebitis, 19% had moderate and 8% had severe thrombophlebitis. The study showed that risk of developing thrombophlebitis is significantly increase among female patients, and also with increased duration of catheterization and use of the peripheral venous catheter for infusion. we recommended elective replacement of catheter every 72 hours and daily examination of catheters for signs of thrombophlebitis by a health care personnel. Phlebitis amongst the peripheral intravenous cannulated patients. The current study was carried out among hospitalized patients, intravenous therapy is the most common invasive procedure and is associated with phlebitis rate of between 2.3% and 60%. Using consecutive sampling technique, 200 patients were studied who were scheduled for intravenous cannulation. The various risk factors studied were age, sex, size of cannula, site of insertion, hand washing and use of gloves etc. The IV site was studied prospectively for the presence and absence of phlebitis till the cannula remained in site. Visual infusion phlebitis scale was used to assess the grade of phlebitis. Mean age (yrs)  $\pm$  SD of the subjects was 41.37yrs  $\pm$  15.81 with range of 18-

87.70% male. Mean duration of cannula in situ was 2.66 days<sup>0.75</sup>. Out of total 200 subjects 113(56.5%) developed phlebitis. There was significant relationship between the phlebitis and duration of cannula in situ, administration of antibiotics and electrolytes ( $p < 0.01$ ).

**Oliveria and Parreria, (2010)** conducted a prospective observational study to identify the incidence of phlebitis and the risk factors which contribute to its development in patients with peripheral intravenous catheters. Nurses observed the peripheral intravenous(Iv) catheterization site daily and the development of phlebitis and the procedure were recorded. A total of 1,244 catheters were observed, and 317 were removed/inserted. A multivariate analysis of risk factors for phlebitis showed patients with KCI (OR:2.112;CI:1.124-3.969), who were on antibiotics (OR:1.877; CI:1.141-3.088) and who had a catheter in an upper limb (OR:0.31;CI:0.111-0.938) were at higher risk for phlebitis. The results show the accurate selection of the catheterization site, which relies entirely on the nursing intervention, is an important factor for phlebitis. The insertion of peripheral intravenous catheters (PIVCs) is a common practice in hospitals, resulting in local or systemic complications. Phlebitis is the main local complication with incidence varying according to different settings(3.7%-67.24%)

Conducted observational study was conducted by **Giancarlo Cicolini, (2009)** to investigate the most suitable location of peripheral venous cannula to reduce the incidence of thrombophlebitis. Peripheral intravenous cannula are used for vascular access, but the site of insertion and size of the cannula could expose patients to local and systemic infections complications. Small cannula size is an important factor in reducing the incidence of thrombophlebitis. A structured observation protocol was used to survey the frequency of thrombophlebitis and the relationship of location and size of peripheral intravenous cannula. The variables evaluated were age, gender, cannula size and site of cannula location. The frequency of peripheral intravenous cannula thrombophlebitis was higher in females ( $p < 0.006$ ). The highest incidence was found in patients with cannula inserted in the dorsal side of the hand veins compared to those with cannula inserted in cubital fossa veins( $p < 0.001$ ). The use of cubital fossa veins rather than forearm and hand veins should be encouraged to reduce the risk of thrombophlebitis in patients with peripheral intravenous cannula.

**Powell., (2009)** A retrospective study review of quarterly assurance data-monitoring indwell time, phlebitis time, phlebitis rating and site and tubing labels-was performed. The purpose of this study was to determine any relationship between peripheral IV catheter indwell time and phlebitis in hospitalized adults. Of 1,161 sites, only 679 had documented indwell time to use. Average indwell time was 1.9 days, and overall phlebitis rate was 3.7%.Analysis of patents revealed a significant association between phlebitis and indwell time. However, asymptomatic peripheral IVs may not need to be removed at regular intervals because there were healthy, asymptomatic sites with indwell time up to 10 days.

**JuvineD.Malika, (2009)** A retrospective cohort study conducted in 338 children submitted to intravenous .The variables related to the children and intravenous therapy were investigated, after approval of the ethical merit. From 338 children, nine (2.7%) developed phlebitis. None of the demographic characteristics influenced significantly the development of phlebitis. Regarding to the therapy, there were significant: The use of the PIC for more than five days ( $P=0.001$ ),intermittent maintenance ( $p=0.001$ )and greater time performance of the PIC ( $p=0.06$ ).The risk factors were: The presence of predisposing conditions to puncture failure ( $P=0.041$ , $OR=4.645$ ),history of complications ( $P<0.001$ , $OR=40.666$ );administration of drugs or solutions with extreme PH and osmolarity ( $P=0.004$ ,  $OR=7.700$ ).

#### **Section D:**

#### **Studies related to effects of selective interventions in minimizing thrombophlebitis.**

**Nilulukuzad, (2011)** conducted a study to determine the effect of external use of sesame oil in the prevention of phlebitis. Sixty patients with colon or rectum cancer, who admitted for chemotherapeutic management, enrolled in clinical trial and were randomly divided into two equal groups: control and interventionten drops of sesame oil was applied twice a day for 14 days externally in intervention group, where as the control group received nothing. Incidence and grade of phlebitis was measured in both groups. Data was analyzed through independent t-test,X<sup>2</sup>,Fisher's exact test,Mann-Whitney, lagrange survival using SPSS 16.There was a significant difference between two groups ( $P<0.05$ ).In addition, there was statistically significant difference between the grade and incidence of phlebitis with sesame oil and control



group ( $P < 0.05$ ). Results shown that external use of sesame oil is effective, safe and well tolerated for prophylaxis from phlebitis. Therefore, it can be suggested as a selected prevention method for reducing the complication.

A study was conducted to assess the effectiveness of application of combination of magnesium sulphate and glycerine dressing on management of pain, limb oedema among patients with thrombophlebitis in a selected hospital, Bangalore. Pre experimental one group pre test–post test design. The study was conducted in K.C.G. hospital, Bangalore. The sample size is 60 with non probability with convenience sampling technique. The study was conducted by assessing the pre test level of pain and limb oedema. After application of combination of magnesium sulphate and glycerine dressing on oedema of the limb there was gradual reduction of pain and limb oedema in experimental group, Statistical analysis showed that pain and oedema was ( $P = 0.01$ ) for the experimental group it was statistically significant. Thus magnesium sulphate and glycerine dressing will help to reduce complications of thrombophlebitis. **Alex John, (2011)**

An interventional study was conducted **John Wiley & sons (2011)** in Mangalore on effectiveness of ice packs thrombophobe gel for reducing intravenous infiltration and pain in patients admitted in paediatric wards. The study was conducted on 40 samples (20 for thrombophobe gel group and 20 for ice cube group) selected using purposive sampling technique. The infiltration was assessed by using modified infiltration scale. The results showed that before the treatment, majority (65%) of patients had grade two infiltration after the treatment with thrombophobe and (100%) of patient's infiltration had reduced to grade one infiltration. In group two majorities (80%) had two infiltrations after the treatment with ice cube 100% had grade one infiltration. The study concluded that both thrombophobe gel and ice pack are effective in reducing intravenous infiltration among paediatric patients.

A comparative study was conducted by **Anumol K.V., (2010)** to assess the effectiveness of hot fomentation verses cold compress in reducing intravenous infiltration and pain among patients in a selected hospital at Mangalore, Karnataka. The design selected in time series design the samples for the study was selected by purposive sampling technique. Infiltration and pain measurement is done using standardized infiltration measurement scale and numerical pain scale respectively. Samples for Hot fomentation and cold compress was assigned randomly by lottery

method. Interventions are applied to both groups to 30 subjects for 15 minutes twice a day for three days. After each intervention post-test was conducted. The duration of data collection is 30 days. Outcome measures (cold compress –hot fomentation  $p < 0.05$ ). The study was concluded that cold compress, is reducing the pain and infiltration among thrombophlebitis patients.

**Zhang et al, (2009)** conducted a study on curative effects of notoginseng cream versus Hirudoid cream in the treatment of infusion phlebitis. 65 patients who received peripheral infusion therapy during a 20 month period and had developed phlebitis were divided randomly into two groups. Group A was treated with notoginseng cream, a topical Chinese medicine produced by the pharmacological department of the second affiliated Hospital of Sun Yat-sen University. Group B was treated with heparinoid cream (Hirudoid, a commercial product from Germany). Significantly fewer applications of notoginseng cream were required to bring about the disappearance of signs and symptoms of phlebitis in the group A patients as compared with the group B patients for the same effect. The actual time of disappearance of the signs and symptoms of phlebitis also were significantly shorter in patients treated with notoginseng cream than with heparinoid cream.

#### **Section E:**

#### **Studies related to effects of chamomile oil on phlebitis Patients.**

**Guo Hua Zheng et al, (2012)** A study conducted to systematically assess the effects of external application of chamomile oil for the reduction of pain, prevention and treatment of infusion phlebitis associated with the presence of an intravenous access device. Randomised controlled trials (RCTs) and quasi-randomised controlled trials (qRCTs) were included if they involved participants receiving application of chamomile oil at the site of punctured skin. A total of 43 trials (35 RCTs and eight qRCTs) with 7465 participants were identified. 22 trials with 1919 participants were involved in the treatment of phlebitis. Chamomile oil reduced the occurrence of third degree phlebitis and second degree phlebitis compared with no treatment. When chamomile oil was compared with 50% MgSO<sub>4</sub> ( $P < 0.0001$ ). For the treatment of phlebitis, chamomile oil was more effective than 33% or 50% MgSO<sub>4</sub>.

**Hu Huali et al (2010)** conducted a study to assess the effectiveness of chamomile oil to prevent phlebitis in malignant patients receiving chemotherapy in

the department of tumour Jinghua Guagfu hospital, China. 1510 cases of malignancy were randomized to observation group and control group. In the observation group, 1000 patients undergoing transvenous chemotherapy were subjected to the application of chamomile oil on the veins. The chamomile was fixed with plaster and replaced every 6 hours until healing of phlebitis. In the control group nothing was applied on 510 cases of patients undergoing transverse chemotherapy. In different chemotherapy modes, the incidence of phlebitis showed significant difference between two groups ( $p<0.05, p<0.01$ ). The incidence of phlebitis in <30 minutes, 24 hours and 72 hours had significant difference between two groups (all  $p<0.01$ ). Applying Chamomile oil was effective in prevention of phlebitis induced by chemotherapeutic drugs, and convenient, inexpensive and practical.

**Luyan et al., (2009)** conducted a study on the effectiveness of chamomile oil resulting in phlebitis. 232 patients were randomized divided into four groups. Experimental group (60 cases) using aloe vera gel, (58 cases) using magnesium sulphate, (58) cases using alcohol and (56) cases applying chamomile oil. While control group not use any preventing nursing way. Result shows that the rate of phlebitis four groups were very significant at 23.8%, 26.6%, 16.45, 42.86% respectively ( $P<0.005$ ). To conclude the study shows application of chamomile oil is effective in preventing phlebitis. So it can reduce the rate of phlebitis and decrease the pain of the patients.

**Quatrin., (2010)** conducted a double blind evaluation of an application of chamomile oil was effect to reduce pain and oedema on inflammatory conditions like thrombophlebitis, who were on intravenous infusions. In this study 56 patients were selected who receives intravenous infusion. Assessment was done with the infusion phlebitis score with 0-5 scores. The duration of data collection in 30 days. 2ml of chamomile oil taken and applied to the experimental group, for a period of 3 days then the post test score was taken. To conclude the study, statistical analysis showed that pain, oedema and severity of inflammation was ( $P=0.01$ ) for the experimental group it was statistically significant.

## CHAPTER – III

### RESEARCH METHODOLOGY

Research methodology is the way to systematically solve the research problem. Methodology occupies a key position as far as research documentations are concerned. It may be understood as a science of studying how research is done. It involves systematic procedure by which the researcher starts from the initial identification of the problem to its final conclusion (Denise. F. Polit., 2011)

This chapter deals with the methodology adapted to this study. It includes research approach, research design, variables, settings, population, sample, sample size and criteria for sample selection, sampling technique, description of tool, content validity, reliability, pilot study, method of data collection, plan for data analysis and ethical consideration.

#### Research Approach

The researcher utilized quantitative research approach.

#### Research Design

Pre experimental one group pre test, post test design was adapted to this study.

The design can be diagrammatically represented as follows

Group	Pre Test	Intervention	Post Test
Study group	O <sub>1</sub>	X	O <sub>2</sub>

O<sub>1</sub> – Pre test measurement of phlebitis

X – Intervention (Application of chamomile oil for 10 minutes)

O<sub>2</sub> – Post test measurement of phlebitis

#### Variables

Independent variable: Application of chamomile oil

Dependent variable: Level of Phlebitis

## **Setting of the Study**

The setting was chosen on the basis of availability of clients undergoing chemotherapy. The study was conducted in chemotherapy unit of international cancer centre at Neyyoor which is 15Kms from Thasiah College of Nursing and it is 250 bedded with 12 beds for chemotherapy patients. Average outpatients attending chemotherapy ranges from 500 – 700 per months.

## **Population**

The population of this study were patients undergoing chemotherapy who has phlebitis.

## **Sample Size**

The sample consists of 60 selected chemotherapy patients between the age of 30 – 60 years, who were admitted in the chemotherapy unit, International cancer centre, Neyyoor.

## **Sampling Technique**

Convenience sampling technique was used to select the samples for the study.

## **Sample Selection Criteria**

The study was conducted based on the following criteria regarding the selection of the sample.

## **Inclusion Criteria**

- Patients with the age group of 30-60 years.
- Patients who were willing to participate.
- Patients who were stable.
- Patients are on chemotherapy more than 6 months.
- Patients with moderate and severe phlebitis.
- IV cannula site in Cephalic vein, Basilic vein, Median cubital vein, Dorsal metacarpal vein, Radial vein, Median brachial vein, Accessory cephalic vein.
- Patients who were 20kms from the hospital(International cancer centre, Neyyoor)

### Exclusion Criteria

- Emergency chemotherapy patients.
- Patients with ventilator support.
- Patients who were critically ill.

### Research Tool

#### Description of Tool

The data collection tool consist of modified visual infusion phlebitis scale

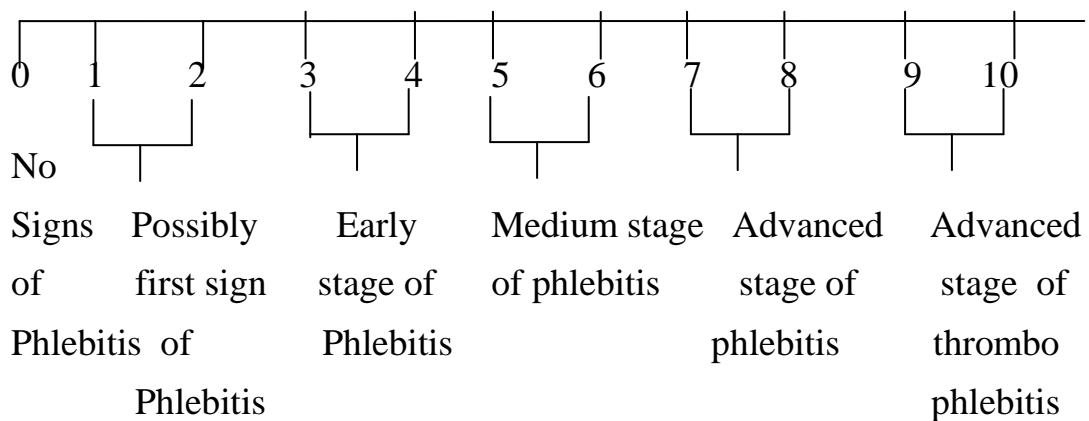
#### Section: A

#### Demographic Variables

The selection deals with demographic variables such as age, gender, skin colour, gauge of catheter, Insertion date, Pre disposing condition, type of infusion method, form of medication and site on intra venous cannula.

#### Section: B

Modified visual infusion phlebitis scale.



## **Interpretation**

0	-	No signs of Phlebitis
1 – 2	-	Possibly first sign of Phlebitis
3 – 4	-	Early stage of Phlebitis
5 – 6	-	Medium stage of Phlebitis
7 – 8	-	Advanced stage of Phlebitis
9 – 10	-	Advanced stage of Thrombo Phlebitis

## **Description of Intervention**

Pre test was done by modified visual infusion phlebitis scale .The fresh chamomile oil 2.5 ml was applied topically and to enrich the process of relaxation, to relive phlebitis. It was applied over the phlebitis area in the palm of the hand in the rotation manner, the time duration was 10 minutes for 3 times a day in 3 consecutive days. On the 4th day post test was conducted in the same group for checking the effectiveness of chamomile oil by using the modified visual infusion phlebitis scale.

## **Content Validity**

### **Validity**

Content validity of tool was established on the basis of the opinion of six experts. Five experts from the field of Nursing and one expert from oncologist. The necessary suggestions and modifications were in corporate in the final preparation of the tool.

### **Reliability**

Reliability of the tool was established using inter rater method. The reliability of the scores is 0.9. Hence the tool was considered reliable for proceeding with the study.

## **Pilot Study**

Pilot study is defined as, “a small scale version or trail run, done in preparation of a major study”.

- Denise F. Polit (2011)

The pilot study was done after obtaining formal permission from the principal and the ethical committee of Thasiah College of Nursing. The pilot study was conducted, PPK hospital, at Marthandam after obtaining formal permission from the director of the hospital. Pilot study was conducted in the month of (7.4.2017 to 13.04.2017) for a period of one week. The researcher introduced herself to the study subjects and established good rapport with them. The sample selected by using convenience sampling technique. Based on inclusion criteria six samples were selected. Application of 2ml chamomile oil was given in the IV site. The time duration of application of the oil was 10 mts for 3 consecutive days. on the 3<sup>rd</sup> day post test was conducted in the same people for checking the effectiveness of the application of chamomile oil by using the modified visual infusion phlebitis scale. All samples were cooperative during the data collection period.

### **Method for data collection:**

#### **Step 1: Selection of patients with phlebitis**

After obtaining permission from International cancer center, Neyyoor the chemotherapy patients who had phlebitis were selected based on the inclusion criteria. Explanation was given to them.

#### **Step 2: Pre assessing of patient with phlebitis:**

The demographic data were collected and pretest was done by using modified visual infusion phlebitis scale.



### **Step 3: Intervention:**

The fresh chamomile oil 2.5 ml was applied topically over the phlebitis area in the palm of the hand by the rotation manner. The time duration was 10 minutes for 3 times a day in 3 consecutive days.

### **Step 4 : Post assessment of chemotherapy with phlebitis patients:**

After the application of chamomile oil, on the 4<sup>th</sup> day post test was conducted by using modified visual infusion phlebitis scale.

### **Plan for Data Analysis**

Data Collected was analyzed using both descriptive and inferential statistics such as mean, standard deviation, chi square and paired 't' test.

### **Descriptive Statistics**

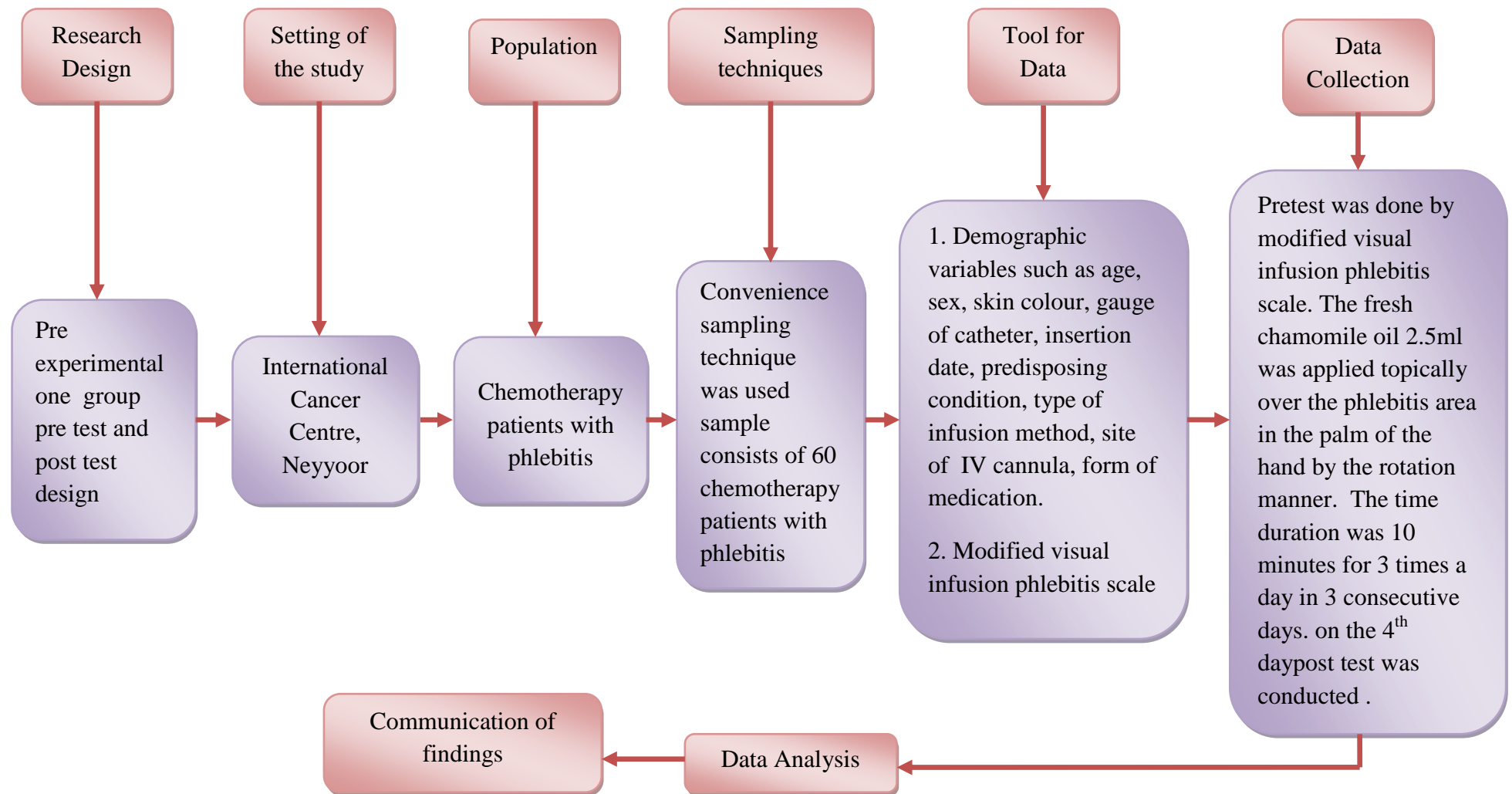
- Frequency and percentage distribution of samples according to demographic variables such as age, sex, skin colour, gauge of catheter, Insertion date, pre disposing condition, Type of Infusion, form of medication and site of intravenous cannula.
- Frequency and percentage distribution were used to assess the level of phlebitis.
- Mean and standard deviation were used to assess the effectiveness of application of chamomile oil.

### **Inferential Statistics**

- Paired 't' test was used to compare pre test and post test score of Phlebitis among chemotherapy patients.
- Chi-square test was used to find out the association of post test score of phlebitis among chemotherapy patients.

## **Ethical Consideration**

The proposed study was conducted after the approval of the dissertation committee of Thasiah college of Nursing, Kanyakumari district, Tamilnadu. Assurance of confidentiality was given to the samples and consent was obtained from the samples.



**Fig3 :Schematic Representation of Research Methodology**

## **CHAPTER IV**

### **DATA ANALYSIS AND INTERPRETATION**

#### **INTRODUCTION:**

This chapter deals with the analysis and interpretation of the data collected from the phlebitis patients. The interpretation of tabulated data can bring light to the real meaning of findings of the study. In this study the data was analysed based on the objectives and hypothesis of the study using descriptive and inferential statistics.

#### **PRESENTATION OF DATA:**

This chapter is divided in to sections,

- Section I: Distribution of the patients undergoing chemotherapy on phlebitis according to the demographic variables.
- Section II: Distribution of phlebitis among patient undergoing chemotherapy.
- Section III: Comparison of effectiveness of application of chamomile oil on phlebitis in pre test and post test score among patient undergoing chemotherapy.
- Section IV: Association of pre test level of phlebitis score among patient undergoing chemotherapy with their selected demographic variables.

### SECTION-I

Table 1: Frequency and Percentage Distribution Of The Patient Undergoing Chemotherapy On Phlebitis.

(N=60)

Demographic variables	Experimental group	
	F	%
Age in years		
a) 30-40 years	8	13.34
b) 41-50 years	24	40.00
c) 51-60 years	28	46.66
Gender		
a) Male	36	60.00
b) Female	24	40.00
Skin color		
a) Reddish	20	33.33
b) Pale	24	40.00
c) Normal	16	26.67
Gauge of catheter		
a) 24 size	12	20.00
b) 26 size	14	23.34
c) 30 size	16	26.66
d) 32 size	18	30.00
Insertion date identified		
a) Yes	40	66.67
b) No	20	33.33
Pre disposing condition for catheter		
a) Yes	40	66.67
b) No	20	33.33

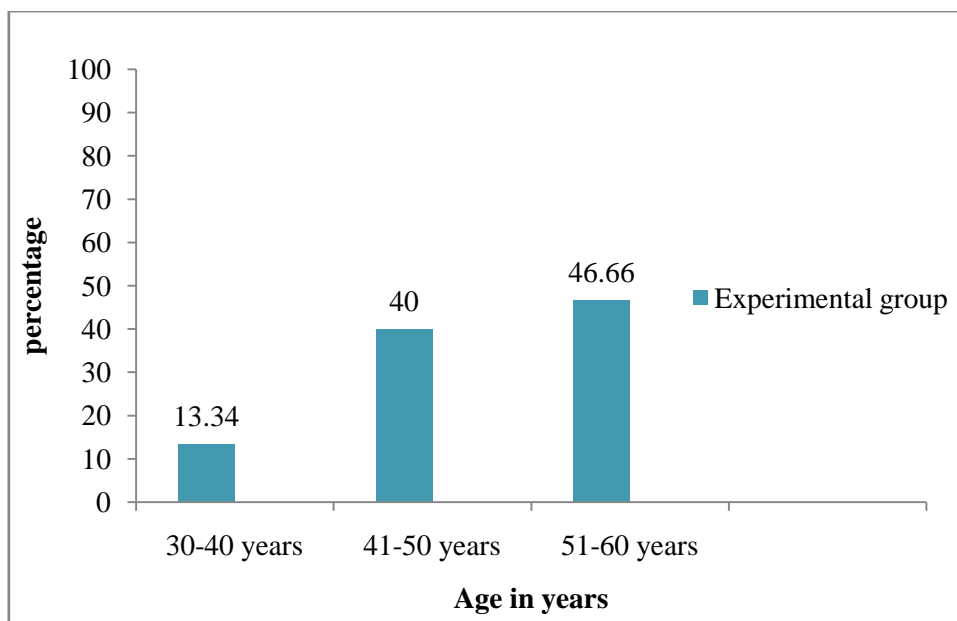
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IV type of infusion		
a) Continuous	15	25.00
b) Intermittent	22	36.67
c) Both	23	38.33
Infusion method		
a) Bolus	15	25.00
b) Gravitational	15	25.00
c) Infusion pump	16	26.67
d) Bolus and gravitational	14	23.33
Form of medication		
a) Liquid form	20	33.33
b) Power form	23	38.33
c) Both	17	28.34
Site of intra venous cannula		
a) Fore arm	14	23.33
b) Radial	30	50.00
c) Ante cubital fossa	16	26.67

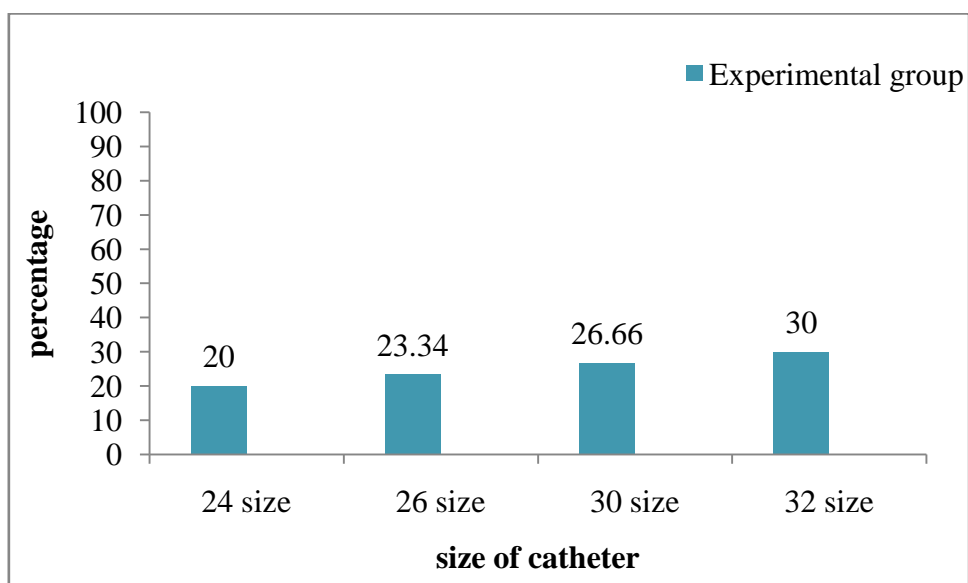
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Table 1 predicts that with regard to age, majority of chemotherapy patients 46.66% belonged to age 50-60 years. Regarding the gender the males were 60.00%. Nearly half of their skin color was pale. 30.00% patients we having 32 gauge type of catheter. More than half 66.67% of their insertion date and pre disposing condition were identified.1/3 of them had both continues and intermittent infusion.

Equal distribution of 25% of them had bolus and gravitational infusion method. Majority (38.33%) patients were used drugs types of fluid administration. Half of the patients had radial IV cannulation.26.6%had their IV cannula in Ante cubital fossa and 23.33 had in forearm.



**Fig.4(a) Frequency and percentage distribution of the chemotherapy patients according to their age group**



**Fig 4(b) Frequency and percentage distribution of the chemotherapy patients according to their gauge of catheter.**

## SECTION-II

**Table 2:Frequency And Percentage Distribution Of Phlebitis Among Patient Undergoing Chemotherapy.**

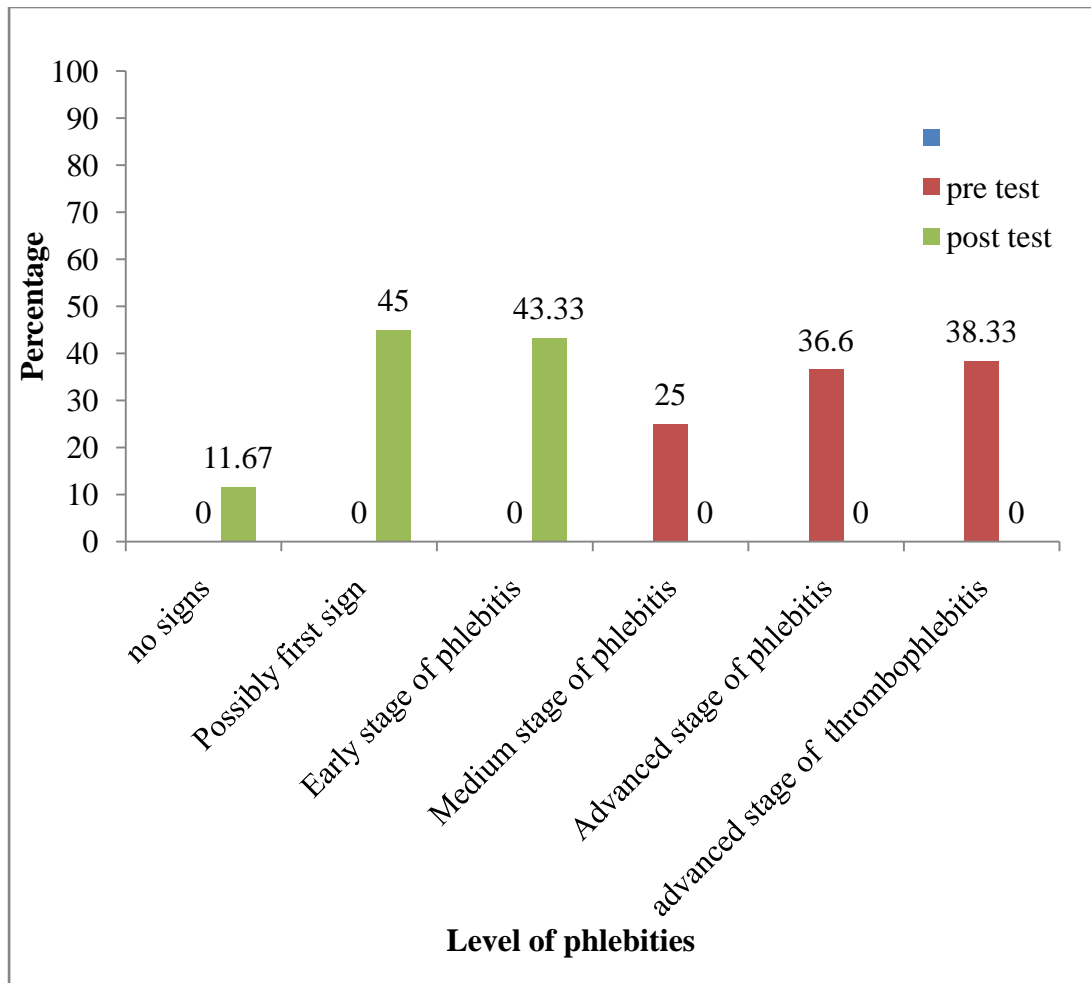
( N=60 )

Level of phlebitis	Pre test		Post test	
	F	%	F	%
No signs	0	0.00	7	11.67
Possibly first sign of phlebitis	0	0.00	27	45.00
Early stage of phlebitis	0	0.00	26	43.33
Medium stage of phlebitis	15	25.00	0	0.00
Advanced stage of phlebitis	22	36.67	0	0.00
Advanced stage of thrombo phlebitis	23	38.33	0	0.00

Table 2 numerically describes that in the pre test majority 23 chemotherapy patients were in Advanced stage of Thrombophlebitis, while 22 of them were in Advanced stage of phlebitis, 1/4<sup>th</sup> of them had in medium stage of phlebitis and none of them were have first sign and early first stage of phlebitis. Where as after the application of chamomile oil most of them 26(43.33%) had early stage of phlebitis only.

Nearly half of them of them 27(45%) had possible first sign of phlebitis. 7(11.67%) of them had no signs of phlebitis. None of them had medium stage of phlebitis, Advanced stage of phlebitis and Advanced stage of thrombo phlebitis. This shows effectiveness of application of chamomile oil on phlebitis.





**Figure 5: Percentage distribution of phlebitis Score among patients undergoing Chemotherapy.**

### SECTION-III

**Table 3: Comparison Of Effectiveness Of Application Of Chamomile Oil On Phlebitis in pre test and post test Score among Patient undergoing Chemotherapy.**

(N=60)

Test	Mean	SD	Mean difference	Paired “t” test	“p” value
Pre test	7.76	2.13	5.57	11.27*	<0.05
Post test	2.19	1.98			
Significant at 0.05 level					

To compare the mean pre test and post test score of application of chamomile oil on phlebitis among patients undergoing chemotherapy, the null hypothesis was stated as follows.

HO1. There will be a no significant difference between pre test and post test phlebitis score among patients undergoing chemotherapy.

The hypothesis was tested using paired “t” test method.

The pre test mean score was 7.76 and the post test score was 2.19 (MD=5.57) The obtained “t” value 11.27 was statistically significant at  $p > 0.05$ . This indicates the mean difference of 5.57 was a true different and has not occurred by chance. This proves that the application of chamomile oil reduced the level of phlebitis.

The above findings fail to support the null hypothesis. Hence the researcher rejects the null hypothesis and accepts the research hypothesis.

## SECTION-IV

**Table 4: Association of pre test Level Of phlebitis score Among Patients Undergoing chemotherapy with their selected demographic variables.****N=60**

S. NO	Variables	Level of phlebitis			X <sup>2</sup>	Df
		Medium F(15)	Advanced F(22)	Throm bophlebitis		
1.	Age					
	a) 30- 40 years	5	3	0		
	b) 41-50 years	7	9	8	11.95*	4
	c) 51-60 years	3	10	15		
2.	Gender					
	a) Male	10	13	13	1.42#	2
	b) Female	5	9	10		
3.	Skin Colour					
	a) Reddish	0	5	15		
	b) Pale	2	15	7	47.40*	4
	c) Normal	13	2	1		
4.	Gauge of Catheter					
	a) 24 size	2	5	5		
	b) 26 size	3	6	5	1.53#	6
	c) 36 size	4	5	7		
	d) 32 size	6	6	6		
5.	Insertion date Identified					
	a) Yes	5	12	23	19.89*	2
	b) No	10	10	0		
6.	Pre disposing condition					
	a) Yes	15	18	7	23.35*	2
	b) NO	0	4	16		

7.	IV type Infusion					
	a) Continuous	3	4	8		
	b) Intermittent	5	10	7	4.38#	4
	c) Both	7	8	8		
8.	Infusion Method					
	a) Bolus	7	4	4		
	b) Gravitations	5	6	4		
	c) Infusion Pump	2	8	6	10.45#	6
	d) Poly and gravitations	1	4	9		
9.	Form of medication					
	a) Liquid form	5	7	8		
	b) Power form	6	10	10	.15*	4
	c) Both	4	5	5		
10.	Intra venous Cannula					
	a) Fore Arm	2	2	3		
	b) Radial	10	18	17	1.83*	4
	c) Ante cubital fossa	3	2	3		

---

\*Significant at 0.05 level

#Not significant at 0.05 level

To find out if there is any association between pre test level of phlebitis and their selected demographic variables like age, sex, skin colour, Gauge of catheter, Insertion date identified, pre disposing condition, IV type infusion, Infusion method, form of medication, type of Intra venous cannula. The null hypothesis was stated as follows:

H02 Their will be no significant association between pre test score of phlebitis and their selected demographic variables like Gender, gauge of catheter, Iv type of infusion and Infusion method.

The above Table predicts that the demographic variables such as age ,skin colour, Insertion date identified, pre disposing condition, form of medication and

Intravenous cannula has significant association with the pre test phlebitis where as the other demographic variables statistically have no association with phlebitis. The above findings partially support the null hypothesis. Therefore the researcher partially rejects the null hypothesis and partially accepts the research hypothesis.

## CHAPTER – V

### RESULTS AND DISCUSSION

The main aim of the study was to assess the effectiveness of application of chamomile oil on phlebitis among patient undergoing chemotherapy in selected cancer centre at Kanyakumari District. The study was conducted by pre experimental one group pre test, post test design. The simple random sampling technique was used for this study. The total sample size was 60, among them 60 were experimental group. The discussion of the study is based on the findings obtained from the statistical analysis.

#### **Distribution of the Patient Undergoing chemotherapy according to their demographic variables**

Distribution of chemotherapy patients who had phlebitis with regard to age, majority of chemotherapy patients 46.66% belonged to age 50-60 years. Regarding the gender the males were 60

.00%. Nearly half of their skin color was pale. 30.00% patients were having 32 gauge type of catheter. More than half 66.67% of their insertion date and pre disposing condition were identified. 1/3 of them had both (continuous and intermittent) IV type of infusion. Equal distribution of 25% of them had bolus and gravitational infusion method. Majority 38.33% patients were used drugs types of fluid administration. Half of the patients had radial IV cannulation.

**The first objective of the study was to determine the level of phlebitis among patients undergoing chemotherapy.**

#### **Distribution of phlebitis score among patient Undergoing chemotherapy.**

The study reveals that in the pre test majority 23 chemotherapy patients were in Advanced stage of Thrombophlebitis, while 22 of them were in Advanced stage of phlebitis, 1/4<sup>th</sup> of them were in medium stage of phlebitis and none of them were have no signs, possibly first sign and early first stage of phlebitis. Where as after the application of chamomile oil most of them 26(43.33%) had early stage of phlebitis.

Nearly half of them of them 27(45%) had possible first sign of phlebitis. 7(11.67%) of them had no signs of phlebitis. None of them had medium stage of phlebitis,, Advanced stage of phlebitis and Advanced stage of thrombo phlebitis. This shows effectiveness of application of chamomile oil on phlebitis.

**The second objective of the study was to evaluate the effectiveness of application of chamomile oil on phlebitis among patients undergoing chemotherapy**

**Comparison of effectiveness Of application of chamomile Oil On Phlebitis in pre test and post test Score among patient undergoing Chemotherapy.**

The study shows that that in pre test mean is 7.76,Whereas in post test mean is 2.19.The mean difference is 5.57 which is high and statistically is 5.57 which is high and statistically significant at 5%level.This proves that application of chamomile oil reduced the level of phlebitis.

**Personal opinion of chemotherapy patients who had chemotherapy with phlebitis after the application of chamomile oil.**

Most of the chemotherapy patients who had chemotherapy with phlebitis reported that application of chamomile oil was very useful which was shown in the following verbatim.

- “I feel so better after application of chamomile oil.
- After the chamomile oil application my swelling and redness also reduced.

**The third objective of the study was to find out the association between the pre test level of phlebitis among patient To undergoing chemotherapy with their selected demographic variables such as age, sex, skin colour, gauge of catheter ,Insertion date, pre disposing condition, Type of Infusion, Form of medication and site of intravenous cannula.**

To find out if there is any association between pre test level of phlebitis and their demographic variables like age, sex, skin colour, Gauge of catheter, Insertion date identified, pre disposing condition, IV type infusion, Infusion method, form of medications, type of Intra venous cannula.

The null hypothesis started as Follows:

H04 Their will be no significant association between pre test level of post phlebitis scale and their To find out if there is any association between pre test level of phlebitis and their demographic variables like age, sex, skin colour, Gauge of catheter, Insertion date identified, pre disposing condition, IV type infusion, Infusion method, form of medications, type of Intra venous cannula.

The null hypothesis predicts that the demographic variables were not statistically not significant association with phlebitis .There was no association between pre test level of phlebitis and To find out if there is any association were skin colour, Gauge of catheter, Insertion date identified, pre disposing condition, IV type infusion, Infusion method, type of fluid, form of medication, type of Intra venous cannula.

## **SUMMARY**

This chapter deals with the achievement objective and hypothesis formulated for the study .By using selected intervention strategies on chemotherapy patients who had phlebitis ,it helps to reduce the phlebitis. So the selected intervention (application of chamomile oil ) was effective nursing intervention for chemotherapy patients who had phlebitis.



## **CHAPTER – VI**

### **SUMMARY NURSING IMPLICATION AND RECOMMENDATION**

This chapter deals with the summary, conclusion, Nursing implications, limitations, and recommendations for further study.

The study was an pre experimental study to find out the effectiveness of application of chamomile oil on phlebitis among patient undergoing chemotherapy in international cancer centre, Neyyoor at Kanyakumari Dist.

The following objectives were set for the study.

#### **Objectives of the Study**

- To determine the level of phlebitis among patients undergoing chemotherapy in experimental group.
- To evaluate the effectiveness of application of chamomile oil on phlebitis among patients undergoing chemotherapy
- To find out the association between the pre test level of phlebitis among patients undergoing chemotherapy with their selected demographic variables as age, sex, skin colour, gauge of catheter, Insertion date, pre disposing condition, type of Infusion, form of medication and site of intravenous cannula.

The following hypothesis were set to the study and tested at  $p < 0.05$  level of significance.

#### **Hypothesis**

- H<sub>1</sub> – There will be a significant difference between pre test and posttest phlebitis among patients undergoing chemotherapy.
- H<sub>2</sub> – There will be a significant association between pre-test phlebitis score among patients undergoing chemotherapy with their selected demographic variables such as age, sex, skin colour, gauge of catheter, Insertion date, pre disposing condition, type of Infusion, form of medication and site of intravenous cannula.

## SUMMARY

Application of chamomile oil is one of the non-pharmacological method of phlebitis management and is been widely practiced in many countries. it is the one of the safe, simple to learn, effective and non invasive method of phlebitis management. This study is based on J.W.Kenny's open system model. Pre experimental one group pre test,post test design was adapted for the study. phlebitis were the dependent variables whereas application of chamomile oil is the independent variables. The tool used in this study consisted of two sections. section one was demographic variables ,section two was visual infusion phlebitis scale score to assess the phlebitis.

In the study was conducted in Inter national cancer centre, Neyyoor. The population of the study were who had phlebitis who met the inclusion criteria.The total number of samples were 60.The data collection tool consisted of visual infusion phlebitis scale. The tool was given to the expert for content validity and was validated by five experts. Reliability was tested by inter rater method.

Pilot study was conducted on 6 samples to find out the feasibility of conducting the study.In the main study, to assess the level of phlebitis among patient undergoing chemotherapy. After the pre test, selected intervention chamomile oil was applied. Post test assessment of phlebitis was done by using modified visual infusion phlebitis scale. The data were collected and analysed using descriptive and inferential statistics. To test the hypothesis, t test and chi square test was used. The level of significance was assessed by  $p < 0.05$  to test the hypothesis.

### Major findings of the study

Frequency and distribution among patients undergoing chemotherapy on phlebitis according to the demographical variables.

Among chemotherapy patients, who had phlebitis with regard to age, majority of chemotherapy patients 46.66% belonged to age 50-60 years. Regarding the gender the males were 60.00%. Nearly half of their skin color was pale. 30.00% patients were having 32 gauge type of catheter. More than half 66.67% of their insertion date and pre disposing condition were identified.1/3 of them had both (continues and

intermittent) IV type of infusion. Equal distribution of 25% of them had bolus and gravitational infusion method. Majority 38.33% patients were used drugs types of fluid administration. Half of the patients had radial IV cannulation.

### **Distribution of phlebitis score among patients under going chemotherapy on phlebitis**

The study revealed that in the pre test majority 23 chemotherapy patients were in Advanced stage of Thrombophlebitis, while 22 of them were in Advanced stage of phlebitis, 1/4<sup>th</sup> of them were in medium stage of phlebitis and none of them were have no signs ,possibly first sign and early first stage of phlebitis. Where as after the application of chamomile oil most of them 26(43.33%) had early stage of phlebitis. Nearly half of them of them 27(45%) had possible first sign of phlebitis. 7(11.67%) of them had no signs of phlebitis. None of them had medium stage of phlebitis, Advanced stage of phlebitis and Advanced stage of thrombo phlebitis. This shows effectiveness of application of chamomile oil on phlebitis

### **Effectiveness of Application of Chamomile Oil**

The study shows that that in pre test mean is 7.76,Whereas in post test mean is 7.76,whereas in post test mean is 2.19.The mean difference is 5.57 which is high and statistically is 5.57 which is high and statistically significant at 5%level.This proves that application of chamomile oil reduced the level of phlebitis.

### **Association between pre test phlebitis score and their selected demographic variables**

The association between the demographic variables such as age (x2 value 11.95 df p>0.005) pre disposing condition (x2 value 23.35 df p>0.005) level.

### **Conclusion**

The following conclusions were drawn for the study.

- The phlebitis score among patient undergoing chemotherapy was significant reduced after application of chamomile oil.

- The study proved that application of chamomile oil is effective in reducing the phlebitis among patients undergoing chemotherapy
- Application of chamomile oil is not having any side effects
- There was no association between phlebitis score of selected demographic variables among patient undergoing chemotherapy on phlebitis.

### **Nursing Implications**

The researcher has derived the following implication from the study results which are of vital concern to the field of nursing service, nursing administration, nursing education and nursing research. By assessing the effectiveness of application of chamomile oil to reduce the level of phlebitis among phlebitis patients, we got a clear picture regarding different steps to be taken in all fields, to improve the standard of nursing profession and implement evidence based practice in health set up.

#### **Implications for nursing Practice**

- Performance of application of chamomile oil is a safe and better modality which has no side effects.
- Application of chamomile oil can be practiced as a routine one in chemotherapy centre.
- Application of chamomile oil can be used as a protocol for treating chemotherapy related phlebitis in all cancer centre settings.
- Nurses can implement this application of chamomile oil and enhance the effectiveness of patient outcome through case presentations.
- Continuous Nursing Education programme for staff nurse.

#### **Implications for nursing Education**

- Nurse educator can train and encourage the student nurses to utilize application of chamomile oil as an alternative complimentary therapy to reduce phlebitis among patients undergoing chemotherapy.
- This study can motivate students nurses to explore new strategies for effective reduction of phlebitis.

- This research report can be kept in library for reference of nursing personal and other health care professionals
- Application of chamomile oil intervention can be integrated with nursing curriculum.
- The nurse educator encourage to conduct in service education program on application of chamomile oil to their staff working in the chemotherapy unit.

### **Implications for nursing Administration**

- Nurse administrator can prepare the protocol regarding application of chamomile oil
- Application of chamomile oil is one of the best nursing intervention in reducing phlebitis among patients with chemotherapy
- The nurse administer should encourage the student and staff members to actively participate in seminars, workshop and conferences regarding application of chamomile oil in reducing phlebitis
- Application of chamomile oil can be recommended in hospital along with routine management of phlebitis
- Nurse administrator can recognize application of chamomile oil as a cheap, cost effective method in the management of phlebitis.
- Nursing administrator can instruct and encourage their subordinates to utilize this as a intervention in their clinical setting.

### **Implications for nursing research**

- Nursing researchers should be aware of the new trends and existing health care system. Emphasis should be laid on researcher in the area of non pharmacological measures of phlebitis management.
- It will in turn strengthen nursing research pertaining in clinical nursing.
- The study can be issued for further reference. It

### **Limitations**

- Convenience sampling technique was used.
- The sampling size was 60.
- The data collection period was only one month.

- The study was limited only to the patients attending chemotherapy.

### **Recommendations**

- A similar study can be conducted among large samples
- Comparison between application of chamomile oil and other non-pharmacological methods can be done.
- Studies can be done to assess the knowledge and practice of nursing staff regarding application of chamomile oil.
- The application of chamomile oil can be induced in the hospital policies.
- Convenience sampling technique was used.
- The sampling size was 60.
- The data collection period was only one month.
- The study was limited only to the patients attending chemotherapy.

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## THASIAH COLLEGE OF NURSING

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25/04/2017

From

The Principal,  
Thasiah College of Nursing,  
Marthandam.

To

The Director,  
International Cancer Center,  
Neyyoor.

Respected Madam/Sir,

Sub : International Cancer Center, Neyyoor – Project work of M.Sc(Nursing) student –  
permission requested – reg.

We wish to state that Mrs.Lila.T, II Year M.Sc (Nursing) student of our college  
has to conduct a Research project, which is to be submitted to The TamilNadu Dr.MGR  
Medical University, Chennai in partial fulfillment of University requirements.

The topic of research project is “A study to assess the effectiveness of chamomile  
oil on phelibitis among patient under going chemotherapy patients at cancer center,  
Neyyoor”

We therefore request you to kindly permit her to do the research work in your  
organization under your valuable guidance and suggestions

Thanking You,

Yours Faithfully,



*[Signature]*  
Principal

**PRINCIPAL**  
Thasiah College of Nursing  
Marthandam - 629 165

Mob : 9789236999  
Hospital : 04651-223093  
222334

**KANYAKUMARI MEDICAL MISSION C.S.I**  
**INTERNATIONAL CANCER CENTRE, NEYYOOR**

**Prof. Dr. V.G. SUDHAKARAN M.D**  
HOD RADIATION ONCOLOGY &  
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iccneyyoor@gmail.com  
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KANYAKUMARI DISTRICT  
TAMIL NADU, S.INDIA

Date.....  
31.05.2017

To

The Principal,  
Thasiah College of Nursing,  
Marthandam.

Dear Madam,

Certify that Mrs.T.Lila, II year M.Sc(N), Thasiah College of Nursing, Marthandam has undergone a study to assess the effectiveness of Chamomile oil on Phlebitis among patient undergoing chemotherapy at International Cancer Centre, Neyyoor. She has completed the data collection from 01.05.2017 to 31.05.2017 and certify that she has successfully carried out the data collection and study.



**Prof. Dr. V.G. SUDHAKARAN, M.D**  
HOD ONCOLOGY  
CONSULTANT RADIATION ONCOLOGY  
INTERNATIONAL CANCER CENTRE NEYYOOR  
REG. No. 4643

## LETTER SEEKING EXPERTS OPINION FOR THE VALIDITY OF THE TOOL.

**From**

T.Lila.,  
M.SC., Nursing II year,  
Thasiah college of nursing,  
Marthandam.

**To**

Respected Sir / Madam,

Sub: Requisition to expect opinion and suggestion for the content validity.

I am T.Lila, M.Sc., Nursing II year, Thasiah C ollege of Nursing , Marthandam, have selected the following topic “ **A study to assess the effectiveness of chamomile oil on phlebitis among patient undergoing chemotherapy in selected cancer centre at Kanyakumari district**” for my dissertation to be submitted to TamilNadu Dr. M.G.R. Medical University in the partial fulfilment of the requirement for award of Master of Science in Nursing .

I request you to go through the items and give your valuable suggestion and opinions to develop the content validity of the tool . Kindly suggest modification, addition and deletions if any in the remarks column.

Thanking you,

Yours sincerely

Place : Marthandam

Date :

**ENCLOSURE:**

1. Problem statement, objectives, and hypothesis of the study.
2. Demographic profile.
3. Visual infusion phlebitis scale.
4. Evaluation performa.

## EVALUATION CRITERIA CHECK LIST FOR VALIDATION

### INTRODUCTION:

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly place tick mark in the appropriate column and give remarks.

### Interpretation of column:

Column I : Meets the criteria.

Column II : Partially meets the criteria.

Column III : Does not meet the criteria.

S.No.	Criteria	1	2	3	Remarks
1	<b>Scoring</b> <ul style="list-style-type: none"> <li>- Adequacy</li> <li>- Clarity</li> <li>- Simplicity</li> </ul>				
2	<b>Content</b> <ul style="list-style-type: none"> <li>- Logical sequence</li> <li>- Adequacy</li> <li>- Relevance</li> </ul>				
3	<b>Language</b> <ul style="list-style-type: none"> <li>- Appropriate</li> <li>- Clarity</li> <li>- Simplicity</li> </ul>				
4	<b>Practicability</b> <ul style="list-style-type: none"> <li>- It is easy to score</li> <li>- Does it precisely</li> <li>- Utility</li> </ul>				

Signature

Any other suggestion

Name

Designation

Address

## LIST OF EXPERTS VALIDATED TOOL

- 1) **Dr. V.G. Sudhakaran M.D**  
HOD Radiation Oncology,  
International Cancer centre, Neyyoor.
- 2) **Mrs. Vinitha bai.,**  
Professor,  
Christian college of Nursing,  
Marthandam.
- 3) **Mrs. Neasalin Suji.,**  
Professor,  
Christian college of Nursing,  
Neyyoor.
- 4) **Mrs.Brightrick Jolliyo.,**  
Professor,  
White Memorial college of Nursing,  
Attoor.
- 5) **Mrs. Prema.,**  
Senior Nurse.,  
Chemotherapy unit,  
International Cancer centre, Neyyoor.

**CERTIFICATE FOR ENGLISH EDITING****TO WHOM SO EVER IT MAY CONCERN**

This is to certify that the tool developed by **Mrs. .T. LILA., II year M.Sc Nursing** student of Thasiah college of Nursing, Marthandam for dissertation **"A STUDY TO ASSESS THE EFFECTIVENESS OF APPLICATION OF CHAMOMILE OIL ON PHLEBITIS AMONG PATIENT UNDERGOING CHEMOTHERPY IN SELECTED CANCER CENTRE AT KANYAKUMARI DISTRICT"** is edited for English language and its appropriateness.

*Vanitha. S*  
Signature

*Vanitha. S*  
(M.A, M.Ed, M.Phil)



**CERTIFICATE FOR TAMIL EDITING****TO WHOM SO EVER IT MAY CONCERN**

This is to certify that the tool developed by Mrs. T.LILA., II year M.Sc Nursing student of Thasiah college of Nursing, Marthandam for dissertation "A STUDY TO ASSESS THE EFFECTIVENESS OF APPLICATION OF CHAMOMILE OIL ON PHLEBITIS AMONG PATIENT UNDERGOING CHEMOTHERPY IN SELECTED CANCER CENTRE AT KANYAKUMARI DISTRICT" is edited for Tamil language and its appropriateness.

S. Asphin kumar.  
Signature

S. Asphin kumar.  
(M.A, M.Phil)



## TOOL FOR DATA COLLECTION

### SECTION: A

#### **Structured questionnaire for the demographic variables collection**

Dear participants you are requested to answer all items. this information will be treated as confidentially. Kindly put a tick mark to answer to which you respond in the specific column, provided in the right side of the questionnaire.

Sample no: .....

- 1) Age
  - a) 30-40 years
  - b) 41-50 years
  - c) 51-60 years
- 2) Gender
  - a) Male
  - b) Female
- 3) Skin color
  - a) Reddish
  - b) Pale
  - c) Normal
- 4) Gauge of catheter
  - a) 24 size
  - b) 26 size
  - c) 30 size
  - d) 32 size
- 5) Insertion date identified
  - a) Yes
  - b) No

6) pre disposing condition for complication

- a) Yes
- b) No

7) IV type of infusion method

- a) Continues
- b) Intermittent
- c) Continues and intermittent

8) IV type Infusion method

- a) Bolus
- b) Gravitational
- c) Infusion pump
- d) Bolus and gravitational

9) Form of medication

- a) Solutions
- b) Drugs
- c) Both

10) Site of Intravenous cannula

- a) Fore arm
- b) Radial
- c) Ante cubital fossa

## SECTION-B

### Modified visual infusion phlebitis score(MVIPS)

#### Instruction:

**Kindly go through each item of the questionnaire carefully and indicate your response by placing a tick ( ) mark in the box.**

S.No	Appearance	0 No signs	1-2 First sign	3 – 4 Early stage	5 – 6 Medium stage	7 – 8 Advanced stage	9 – 10 thrombosphebitis
I	IV site appears healthy						
II	One of the following signs is evident » Slight pain near IV site » Slight redness near IV site						
III	Two of the following are evident » Pain at IV test » Redness » Swelling						
IV	All of the following signs are evident » Pain along path of cannula » Redness around site » Swelling						
V	All of the following signs are evident and extensile » Pain along path of cannula » Redness around site » Swelling » Palpable venous cord						
VI	All of the following signs are evident and						

	extensile » Pain along path of cannula » Redness around site » Swelling » Palpable venous cord » Pyrexia » Palpable venous cord greater than 2.54 cm » Purulent drainage						
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### Scoring and Interpretation

0	-	No Signs of Phlebitis
1 – 2	-	Possible first sign of phlebitis
3 – 4	-	Early stage of phlebitis
5 – 6	-	Medium stage of phlebitis
7 – 8	-	Advanced stage of phlebitis
9 – 10	-	Advanced stage of thrombo phlebitis

## பிரிவு -அ

மக்கள் இயல் முழு ஆய்வு தகவல்

மாதிரி எண்

1. வயது

- அ) 30-40
- ஆ) 41-50
- இ) 51-60

2. பாலினம்

- அ) ஆண்
- ஆ) பெண்

3. தோலின் நிறம்

- அ) சிவப்பு நிறம்
- ஆ) வெளிர் நிறம்

4. தோலில் போடும் நரம்பு ஊசியின் அளவு

- அ) 24 அளவு
- ஆ) 26 அளவு
- இ) 30 அளவு
- ஈ) 32 அளவு

5. நரம்பு தண்டு ஊசி போட பட்ட நாள் குறிப்பிடப்பட்டிருக்கிறதா?

- அ) ஆம்
- இ) இல்லை

6. ஏதேனும் பின்விளைவுகள் இதற்கு முன்பு ஏற்பட்டது உண்டா?

- அ) ஆம்
- ஆ) இல்லை

7. நரம்பு தண்டு ஊசி எந்த நிலையில் போட பட்டிருக்கிறது?

- அ) தொடர்ச்சியாக
- ஆ) இடைவெளி விட்டு
- இ) தொடர்ச்சியாக மற்றும் இடைவெளி விட்டு

8. நரம்பு தண்டு ஊசியில் போடப்படும் மருந்து எந்த முறையில் போட பட்டிருக்கிறது?

- அ) அதிகவேகமாக
- ஆ) வேகமாக
- இ) சொட்டு சொட்டாக
- ஈ) வேகம் மற்றும் அதிவேகம்

9. எந்த வகையான மருந்துகள் உபயோகபடுத்த பட்டிருக்கிறது?

- அ) நீர் நிலை மருந்து
- ஆ) மருந்துகள்
- இ) நீர் நிலை மற்றும் மருந்துகள்

10. உடலின் எந்த பகுதியில் நரம்பு தண்டு ஊசி போட பட்டிருக்கிறது?

- அ) முன் கை
- ஆ) முழங்கை

## பிரிவு - ஆ

மாற்று பரிமாண குருதி புறத்தோல் அறிகுறி விவர பட்டியல்

வ.எண்	தோற்றம்	0	1-2	3-4	5-6	7-8	9-10
1	குருதிநாளம் ஆரோக்கியமாக தோன்றுவது						
2	பின்வரும் அறிகுறிகள் நிச்சயமாக தோன்றுவது » குருதி நாளம் பக்கத்தில் ஒரு சிறிய வலி » குருதி நாளத்தின் பக்கத்தில் ஒரு சிகப்பு நிறம் இருத்தல்						
3	கீழ் உள்ள அறிகுறிகள் இரண்டு நிச்சயமாக உள்ளது » குருதி நாளங்களில் வலி » சிகப்பாயிருத்தல் » வீக்கம்						
4	கீழ் கண்ட அனைத்து அறிகுறிகளும் நிச்சயமாக உள்ளது » குருதி நாளப் பாதையில் வலி » குருதி நாளப் பாதையை சுற்றி சிகப்பாயிருத்தல் » குருதி நாளப் பாதையில் வீக்கம்						
5	கீழ் கண்ட அனைத்து அறிகுறிகளும் விரிவாகத்தின் வெளிப்படையான அடையாளம் » நரம்பு குழாய் பாதையில் வலி » பாதையை சுற்றி சிகப்பாயிருத்தல் » வீக்கம் » நரம்பு தண்டுகள் உணரக்குடியதாக இருத்தல்						
6	கீழ் கண்ட அனைத்து அறிகுறிகளும் விரிவாகத்தின் வெளிப்படையான அடையாளம் » குருதி நாளம் பாதையில் வலி » பாதையை சுற்றி சிகப்பாயிருத்தல் மற்றும் வீக்கம் » நரம்பு தண்டுகள் உணரக்குடியதாக இருத்தல் » காய்ச்சல் » நரம்பு தண்டுகள் 2.54 செ.மீ விட அதிகமாக இருத்தல் » நரம்பு பாதை தடித்திருத்தல்						

### அளவீடு

- 0- குருதி நாளத்தின் புறத்தோல் வீக்கத்தில் மாற்றம் எதுவும் இல்லை
- 1-2 குருதி நாளத்தின் புறத்தோல் வீக்கத்தில் சிறிது மாற்றம் இருக்கும்
- 3- 4 குருதி நாளத்தின் புறத்தோல் வீக்கம் தொடக்க நிலையில் இருக்கும்
- 5-6 குருதி நாளத்தின் புறத்தோல் வீக்கம் நடுத்தர நிலையில் இருக்கும்
- 7-8 குருதி நாளத்தின் புறத்தோல் வீக்கம் அதிகமாக இருக்கும்
- 9-10 குருதியுறைவு மிக அதிகமாக இருக்கும்